CLAIMS

Composition Claims

1.) A coated stent comprising:

a) a stent and

b) a coating composition comprising:

1) an HMG-CoA reductase inhibitor in an amount effective to inhibit proliferation of smooth muscle cells in a body lumen of a patient, and

2) a carrier.

2. The coated stent of claim 1 wherein the carrier is a nonpolymeric carrier.

3. The coated stent of claim 1 wherein the carrier is a polymeric carrier.

4. The coated stent of claim 1 wherein the carrier is a liquid at body temperature.

5. The coated stent of claim 4 wherein the carrier is a solid at room temperature.

6. The coated stent of claim 1 wherein the carrier is polymeric and the HMG-CoA reductase inhibitor is physically bound to the carrier.

7. The coated stent of claim 1 wherein the carrier is polymeric and the HMG-CoA reductase inhibitor is chemically bound to the carrier.

8. The coated stent of claim 1 wherein the coating composition is a liquid at body temperature.

9. The coated stent of claim 8 wherein the coating composition is a solid at room temperature.

10. The coated stent of claim 1 wherein the coating composition further comprises:

a. a solvent and wherein the coating composition is a liquid at body temperature.

11. The coated stent of claim 1 wherein the coating composition is a solid at body temperature.

12. The coated stent of claim 1 wherein the coating composition comprises from about 1 wt% to about 50 wt% HMG-CoA reductase inhibitor, based on the total weight of the coating composition.

13. The coated stent of claim 1 wherein the coating composition comprises from about 5 wt% to about 30 wt% HMG-CoA reductase inhibitor, based on the total weight of the coating composition.

14. The coated stent of claim 1 wherein the coating composition comprises from about 10 wt% to about 20 wt% HMG-CoA reductase inhibitor, based on the total weight of the coating composition.

15. The coated stent of claim 1 wherein the HMG-CoA reductase inhibitor is selected from the group consisting of cerivastatin, atorvastatin, simvastatin, fluvastatin, lovastatin, and pravastatin.

16. The coated stent of claim 1 wherein the HMG-CoA reductase inhibitor is cerivastatin.

17. The coated stent of claim 1 wherein the coating composition further comprises:

a) a restenosis inhibitor which is not an HMG-CoA reductase inhibitor.

18. The coated stent of claim 1 wherein the carrier is non-reactive with the HMG-CoA reductase inhibitor.

19. The coated stent of claim 1 wherein the carrier comprises a polymer having no functional group that is reactive with the HMG-CoA reductase inhibitor.

20. The coated stent of claim 1 wherein the carrier comprises a biodegradable polymer.

21. The coated stent of claim 1 wherein the carrier comprises a polymer selected from the group consisting of polyhydroxy acids, polyanhydrides, polyphosphazenes, polyalkylene oxalates, biodegradable polyamides, polyorthoesters, polyphosphoesters, polyorthocarbonates, and blends or copolymers thereof.

22. The coated stent of claim 1 wherein the carrier comprises a biostable polymer.

23. The coated stent of claim 1 wherein the carrier comprises a polymer selected from the group consisting of polyurethanes, silicones, acrylates, polyesters, polyalkylene oxides, polyalcohols, polyolefins, polyvinyl chlorides, cellulose and its derivatives, fluorinated polymers, biostable polyamides, and blends or copolymers thereof.

24. A method of coating a stent comprising:

a) providing a stent;

b) providing a coating composition comprising

1) an HMG-CoA reductase inhibitor in an amount effective to inhibit proliferation of smooth muscle cells in a body lumen of a patient; and

2) a carrier; and

c) applying the coating composition to the stent.

25. The method of claim 24, wherein said step of providing the coating composition comprises mixing the HMG-CoA reductase inhibitor, the carrier, and a solvent under conditions such that the HMG-CoA reductase inhibitor does not chemically react to any substantial degree with the carrier.

26. The method of claim 24, wherein said step of providing the coating composition comprises mixing the HMG-CoA reductase inhibitor, the carrier, and a solvent at a temperature of from about 20°C to about 30°C.

27. The method of claim 24, further comprising:

a) expanding the stent before applying the coating composition to the stent.

28. The method of claim 24, wherein said step of applying comprises spraying the coating composition onto the stent.

29. The method of claim 24, wherein said step of applying comprises immersing the stent in the coating composition.

30. The method of claim 24, further comprising:

a) drying the stent after the coating composition is applied to the stent.

31. The method of claim 24, wherein said step of providing comprises forming the coating composition into a film, and said step of applying comprises wrapping the film around the stent.

32. The method of claim 24, further comprising:

a) drying the stent after the coating composition is applied to the stent and

b) applying a second coating composition comprising a polymer to the dried stent.

33. The method of claim 24, further comprising:

a) drying the stent after the coating composition is applied to the stent; and

b) applying a second coating composition comprising a polymer and a substantially unreacted HMG-CoA reductase inhibitor to the dried stent.

34. The method of claim 24, wherein said step of providing comprises mixing the HMG-CoA reductase inhibitor, a polymer carrier, and a solvent.

35. The method of claim 24, wherein said step of providing comprises providing said HMG-CoA reductase inhibitor at from about 1 wt% to about 50 wt%, based on the total weight of the coating composition.

36. The method of claim 24, wherein the carrier is nonreactive with the HMG-CoA reductase inhibitor.

37. The method of claim 24, wherein the carrier comprises a biodegradable polymer.

38. The method of claim 24, wherein the polymer includes a biostable polymer.

39. The method of claim 24, wherein the HMG-CoA reductase inhibitor is selected from the group consisting of cerivastatin, atorvastatin, simvastatin, fluvastatin, lovastatin, and pravastatin.

40. The method of claim 24, wherein the HMG-CoA reductase inhibitor is cerivastatin.

41. A method of treating restenosis, comprising

a) providing a coated stent comprising

1) a stent, and

2) a coating composition, coupled to said stent, comprising an HMG-CoA reductase inhibitor and a carrier,

b) delivering said coating stent to an occluded body lumen, and

c) expanding said stent to provide support to said body lumen.